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U.S. Policy and the International Environment

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International political and economic relationships increasingly are affected by environmental and scientific concerns. Active U.S. participation is critical to the success of international environmental initiatives. The State Department's Bureau of Oceans and International Environmental and Scientific Affairs (OES), established in 1974, has become a focal point within the U.S. Government for its environmental foreign policy, which combines traditional diplomacy with a unique mix of expertise in specialized fields.

OES works closely with its 29-member advisory committee, the United Nations, governmental and nongovernmental organizations, and foreign governments and interest groups to deal with a full range of "quality of life" issues. In the last 3 years, OES has played a central role in the negotiation of more than 30 important international agreements, including a number signed at the May 1988 Moscow summit. The bureau is responsible for assuring that ocean, nuclear nonproliferation, scientific, technological, population, environmental, and health issues are taken into account as foreign policy decisions are made.

The Atmosphere

Ozone Depletion. A thin, gaseous blanket lies in the upper atmosphere. This natural shield—the ozone layer—filters out the sun's harmful ultraviolet rays, thereby protecting all life below. Any significant reduction in atmospheric ozone may result, over the long-term, in increases in skin cancer and cataracts, damage to the human immune system, reductions in crop yields, and alterations in land and water ecosystems.

Today, this protective layer is being threatened by chlorofluorocarbons (CFCs), an industrial gas used in the production of many common products, and a handful of other industrial gases.

> *"We face the prospect of being trapped on a boat that we have irreparably damaged—not by the cataclysm of war, but by the slow neglect of a vessel we believed to be impervious to our abuse."*
>
> Vice President Bush
> May 16, 1988

The United States was the first country to take the threat of ozone-layer depletion seriously and, in 1977, amended the Clean Air Act to study the problem. The following year, the U.S. Government banned the use of CFCs in nonessential aerosols. Despite these efforts, in August 1985, a National Aeronautics and Space Administration satellite confirmed the existence of a hole in the Antarctic ozone layer, which varies in size seasonally. With increasing production of CFCs and additional ozone-depleting compounds throughout the world—in both developed and developing countries—ozone-layer depletion has become an important international issue.

International concern led to the Vienna Convention for the Protection of the Ozone Layer (1985), which emphasized research, monitoring, and data exchange. The Montreal Protocol on Substances that Deplete the Ozone Layer followed in September 1987. Nations signing the agreement vowed to halve the production and consumption of CFCs by 1999. Considerable depletion of the ozone layer already has taken place. For the first time, however, the international community of nations recognized and agreed to deal with a global environmental threat before it became an immediate crisis.

Acid Rain. Another environmental threat occurs when certain compounds, specifically sulfur dioxide (SO_2) and nitrogen oxide (NOx), are released into the atmosphere. Primarily the results of burning fossil fuels such as coal, these compounds mix with the moisture and molecules in the air and are chemically transformed, falling to the earth as acids in snow, rain, or fog. This "acid rain" is believed to damage trees, affect crop yields, and kill fish and vegetation in lakes and streams.

U.S. emission controls met with some success between 1973 and 1983 when legislative efforts led to a 28% drop in SO_2 emissions. However, the transboundary movement of acid rain remains a serious problem and a major point of contention in U.S.-Canadian relations.

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OES Assistant Secretary Frederick Bernthal with equipment used to measure the ozone layer above the Antarctic.

In 1985, President Ronald Reagan and Canadian Prime Minister Brian Mulroney appointed two special envoys to study this issue and to make recommendations. The report called for a 5-year, $5-billion program (equally financed by industry and government) to develop ways to burn coal cleanly. In February 1989, George Bush, on his first international trip as President of the United States, reaffirmed U.S. efforts to address the transboundary acid rain problem, assuring the Canadian people that its reduction will be a top U.S. Government priority. Currently, the State Department and other government agencies, such as the Environmental Protection Agency, are working together to find a solution.

Global Climate Change. In the United States, 4 of the 10 hottest years in the last century have occurred during this decade. Although the earth is always getting warmer or cooler and temperature variation is normal, the possible link of climatic change to substantial concentrations of carbon dioxide and other "greenhouse gases" in the atmosphere is cause for concern.

Greenhouse gases form a blanketing layer around the earth, which traps the sun's heat. As a car's interior heats up on a summer day, so might the earth become warmer in the next century, with unknown and potentially harmful consequences. Yet, global climate change is a very complex issue, and major uncertainties exist about the offsetting effects of cloud cover, ocean and atmospheric dynamics, and other factors.

The U.S. Government supports international cooperation to deal with global climate change. Under the auspices of the World Meteorological Organization and the UN Environment Program (UNEP), an international effort to address the issue recently was organized. Representatives of more than 35 nations and international organizations met in Geneva, Switzerland, in November 1988 for the first meeting of the Intergovernmental Panel on Climate Change (IPCC). Among other things, it established three working groups: one to review and assess scientific findings that relate to climate change; another to assess the possible environmental and socioeconomic impacts of such change; and the third—chaired by the United States—to identify potential response strategies. The State Department hosted the first meeting of the Response Strategies Working Group in January 1989, in preparation for the IPCC report of its findings to the Second World Climate Conference in the fall of 1990.

Tropical Deforestation

According to UNEP, tropical forests are being destroyed at a rate of about 21.5 hectares (53 acres) a minute. The international community is actively seeking solutions to global deforestation. Since most of the world's forests lie in developing areas of sub-Saharan Africa, the Amazon basin, and Indonesia, where growing populations put increasing pressure on forest resources, developmental assistance has been used to help alleviate environmental problems. In this effort, the State Department is working closely with the U.S. Agency for International Development (AID) and the U.S. Treasury Department to persuade multilateral development banks to more carefully and consistently integrate environmental considerations—such as forest conservation—into their project design and implementation.

The United States also has been active in programs promoting long-term economic goals. Agricultural expansion is responsible for approximately 80% of tropical deforestation. However, the fertility of such land is exhausted quickly, forcing subsistence farmers to clear additional acreage within 1–2 years. U.S.-sponsored agroforestry projects combine traditional sustainable agriculture, forestry, and livestock systems with modern technology. This approach conserves fragile ecosystems and provides jobs. The State Department also works with a variety of agencies—including AID, the World Bank, UNEP, and the Food and Agriculture Organization—in cooperative efforts with tropical countries to develop other management strategies for forest resources. By the end of fiscal year 1987, for example, AID's bilateral tropical forestry program totaled more than $56 million and supported 146 forestry-related projects in 46 developing countries.

Recognizing the importance and benefits of sustainable development to agriculture, the United States actively participates in the International Tropical Timber Association, which provides consultation and promotes cooperation among 41 consumer and producer countries that represent 95% of the world's tropical timber trade. The association also supports reforestation, sound forest management, and economic uses of tropical woods in harmony with conservation.

Endangered Species

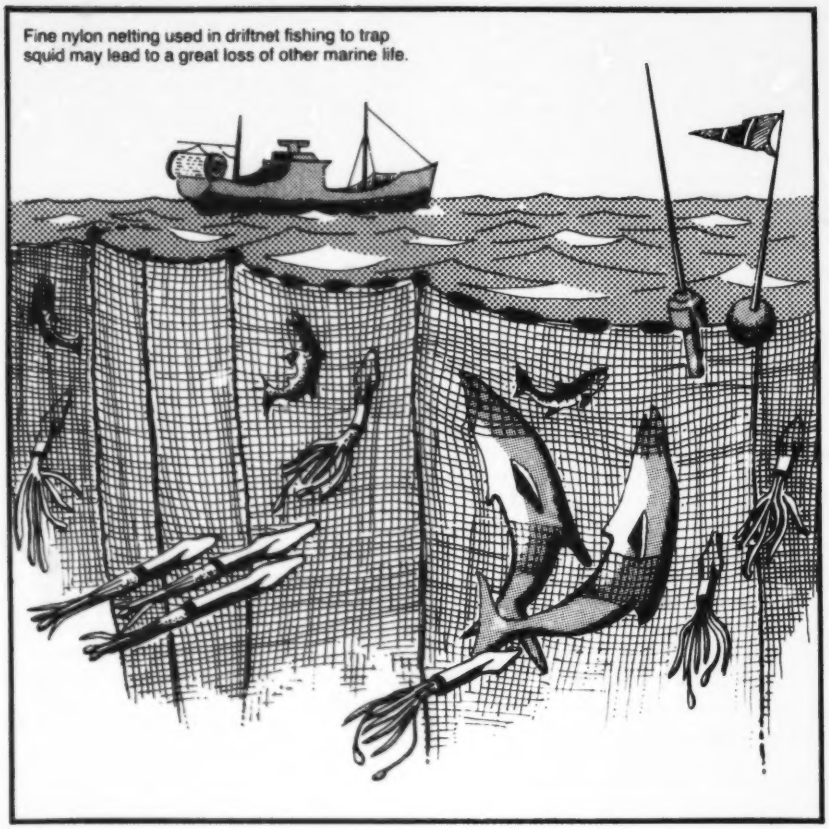
According to scientific estimates, there are 1.5 million identified forms of life on this planet and up to 10 million additional forms that evolve and disappear before they are identified. The tropical forests contain almost one-half of the world's plant and animal species, and some scientists estimate that more than 100 of these species are being destroyed daily. Besides the fact that plants and animals have both inherent and aesthetic value, much of the world's

agriculture, medicine, and science depend on a variety of species. One quarter of all prescription drugs sold in the United States, for example, are made with tropical plants.

Problems of endangered species span the globe. As of January 1, 1989, the U.S. Fish and Wildlife Service listed 117 animal species as being threatened and 713 as endangered. Included on these lists are the world's two largest land animals—the African elephant and the rhinoceros.

The Endangered Species Act calls upon the Secretary of the Interior, through the Secretary of State, to encourage foreign countries to conserve fish and wildlife, and to enter into international agreements to provide for such conservation. The State Department, in cooperation with various agencies, actively participates in a wide range of international efforts to protect the world's vital ecosystems.

At the bilateral level, for example, the United States signed an agreement with Canada in 1987 to conserve the Arctic region's porcupine caribou herd. Multilaterally, the United States is a founding member and the largest contributer to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which has promoted the resurgence of, among others, the alligator and the leopard. The United States initiated two conventions aimed at protecting Antarctic species: the Convention on the Conservation of Antarctic Marine Living Resources (1982) and the Convention for the Conservation of Antarctic Seals (1978). After a 2–3 year effort, the United States succeeded in putting the topic of an international convention on biological diversity on the agenda of the UNEP Governing Council in May 1989.



Fine nylon netting used in driftnet fishing to trap squid may lead to a great loss of other marine life.

Threats to Marine Life

Recently, Japan, South Korea, and Taiwan have employed a driftnet fishing technique that some refer to as "biological stripmining." During the fishing season, hundreds of vessels daily use fine, nylon netting that spans 30,000–40,000 miles of high sea waters to trap squid. The problem arises when these nets entangle and kill other species, such as fur seals, dolphins, porpoises, pomfrets, and sea birds. There is major concern that the great loss of marine resources resulting from the practice of driftnet fishing may affect the aquatic foodchain and ecosystem. However, scientists know very little about how the ocean's populations are being affected.

The Driftnet Impact Monitoring, Assessment, and Control Act of 1987 was the initial U.S. response to this problem. It noted a need for more information on the various species involved and recommended increased efforts to monitor, assess, and reduce the adverse impacts of driftnets. Congress called on the Secretary of State to negotiate immediately with foreign authorities concerning driftnet activities. Over the last 1½ years, OES has sought agreements which would include placing observers aboard driftnet fishing vessels to gather vital information.

International Transport and Disposal of Hazardous Wastes

Hazardous wastes—such varied and dangerous materials as incinerator ash laden with cancer-causing heavy metals, biological hospital wastes (e.g. used needles), and compounds containing deadly mercury and lead—pose a threat to the health of all who come into contact with them. If not properly disposed of, these wastes can lead to birth defects, miscarriages, various diseases (including cancer), and contamination of land and water supplies.

In recent years, the toxic waste transfer industry has become an international business, as the costs of proper disposal of wastes by industrial nations have increased steadily. Offering developing nations economic incentives for becoming industry's "trashcan" has become an alternative: "garbage barges" have returned to port mysteriously empty; and poisonous incinerator ash has been dumped in developing countries. This trade often is illegal, and there is tremendous pressure on individual officials to accept wastes, despite their inability to cope with the shipments once they arrive.

The United States currently is party to two global agreements which address disposal of wastes at sea:

• The Convention for the Prevention of Pollution from Ships, which regulates discharges of harmful substances from ocean-going vessels; and

• The London Dumping Convention, which attempts to prevent marine pollution by banning sea disposal of a number of wastes and listing others which may be disposed of only with special care.

The United States has the strictest hazardous waste disposal laws in the world. It exports less than 1% of the hazardous wastes it generates every year, and since 1985, none of these wastes has been shipped to developing nations other than to Mexico for recycling. On March 10, 1989, President Bush called the transboundary movement of hazardous wastes "an environmental issue of great concern" and urged even greater hazardous wastes regulation.

At the same time, U.S. diplomats concluded 18 months of work with UNEP and foreign governments on the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal. On March 22, 34 countries signed the convention. The United States, the Soviet Union, and some other countries are now studying the treaty.

The new treaty covers international shipments and disposal of hazardous wastes and calls for international cooperation in the training of technicians, the exchange of information, and the transfer of technology. It forbids transporting hazardous wastes to countries where there is reason to believe environmentally sound disposal may not take place. It also requires a government's written agreement to accept and dispose of toxic wastes in an environmentally safe manner before shipment can take place.

Scientific Cooperation

As new frontiers in science and technology are reached, the complexity and cost of the projects have become almost impossible for a single nation to manage. The largest international scientific cooperative effort in history is scheduled to begin orbiting the earth in 1996. With people and equipment provided by the United States and 11 other industrial nations, the space station "Freedom" is a $24-billion prototype for cooperative research in the coming century. It is the result of nearly 3 years of intense international negotiations led by the Department of State and the National Aeronautics and Space Administration.

Scientific research 250 miles above the earth will have three additional resources: near zero gravity, the continuous presence of scientists, and a unique vantage point for observing the stars and the earth. It will open new research paths in biology, physics, and chemistry. Life science experiments aboard the vessel will give scientists a better idea of how human bodies adapt to long periods in space. Additional experiments and observations also should provide answers to a number of the world's most pressing environmental questions.

The United States has a number of scientific programs taking place around the globe. One of the most successful is a land satellite system (LANDSAT), with 14 foreign ground stations, including installations in Thailand, Indonesia, Pakistan, and India. From the earth's reflections, which LANDSAT records, scientists can measure such things as agricultural stress, acid rain damage, erosion, and deforestation. The system also assesses resource bases and demographic patterns. Experiments are being conducted to determine if it can be used to predict floods and to measure the extent of natural disasters. In the fires that swept across the western United States in 1988, for example, LANDSAT proved to be a valuable tool in tracking their destructive paths.

OES manages science and technology agreements with 10 countries and guides the development and implementation of several hundred more arrangements. In January 1989, the United States signed a new basic science agreement with the Soviet Union which will make possible cooperation on a number of mutually beneficial research projects. The United States also is engaging in bilateral scientific research with developing nations. One major program in India, for example, focuses on dry land agriculture. The beneficial implications for India, as well as the arid sections of the United States, can be substantial.

Each country's unique interests tend to determine the thrust of bilateral scientific efforts. Yet, whatever the project, scientific cooperation furthers international cooperation in other areas. The State Department—along with many international organizations, private agencies, and governments around the world—aims to maintain and develop such international efforts. Cooperation is the key to saving the "boat" on which we all live, eat, breathe, and interact with each other and with nature.

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